

REMARKS

In the outstanding Office Action, claims 28 to 39 were presented for examination. Claims 28-39 were rejected variously on the basis of 35 U.S.C. §102 or §103 as being anticipated by or unpatentable in view of references to Minematsu, Shpiro and Lessac.

The Office Action has been most carefully studied. In this amendment applicant has canceled claims 28-29, 35, 37 and 39 without prejudice. In addition, claims 33 and 39 have been amended. The new and amended claims have been carefully written to avoid any questions under 35 U.S.C. §112, in accordance with the guidelines and requirements set forth in the outstanding Office Action. Accordingly, as will be discussed in detail below, it is believed that the application is clearly in condition for allowance.

Request for Entry under 37 CFR §1.116

In this amendment the claims have been amended to overcome the rejections made, as explained hereinbelow. No claims are added and no new issues are raised. Furthermore, the amendments are believed to place the application in condition for allowance or, in the alternative, in better condition for consideration on appeal. Accordingly, entry of this amendment under 37 CFR §1.116 is respectfully requested.

The Amended Claims

The subject matter of now-canceled claim 39 has been added to parent claim 38. In effect, claim 39 has been rewritten as an independent claim, amended claim 38 and amended claim 38 is not narrowed as compared with claim 39. Along with the cancellation of claims 28-29, the claims are now limited to that aspect of the invention which employs different speakers with different speaking norms to generate different word databases. One database is a database of properly pronounced sounds and another database is a database of mispronounced sounds.

Claimed Invention Not Suggested by Minematsu and Shpiro

The invention as claimed in independent claims 30 and 39 is believed clearly and patentably distinguished from the art of record, whether considered alone or in combination. In particular, the claimed invention is believed not remotely suggested by Minematsu or Shpiro or any combination of the two references.

As admitted by the Office, in the Office action at page 7, second paragraph and page 11, last three lines to page 12, first two lines, Minematsu does not disclose a speech recognition method wherein a person who normally speaks the audible sounds properly creates a database of proper pronunciation. Equally, Shpiro does not disclose a database of mispronounced sounds generated by a speaker who normally mispronounces the sounds.

Neither Minematsu nor Shpiro teaches or suggests the use of a combination of two pronunciation databases one of which contains proper pronunciations from a speaker who normally pronounces the sounds correctly and the other of which contains mispronunciations from a different speaker. Nor does Shpiro correct the deficiencies of Minematsu in this respect, in applicant's view as is further explained hereinbelow. Use of different speakers for different databases selected for having normal speech which is in accord with the desired character of the databases sharpens the distinction between proper and improper pronunciation. The sharpened difference, reflecting the use of different speakers for the different databases, can be used to enhance recognition. The effect is amplified when the methodology is applied across a large vocabulary of words represented by sounds in the database. The overall recognition performance can be improved by small individual enhancements in the recognition of many individual sounds, leading to better system discrimination of the correct pronunciation from the mispronunciation.

In contrast, a single speaker, or even multiple speakers having a single pronunciation norm, will usually have difficulty effectively mispronouncing a word to have the same sound as another person normally mispronouncing the word would give

it. It is still more difficult accurately to mispronounce continuous speech, and the difficulties are compounded further in attempting to compile a large sound database comprising a full library of mispronounced reference words.

Neither Minematsu nor Shpiro discloses or suggests that enhanced speech recognition can be obtained by going to the additional trouble and expense of using different speakers with different speaking norms to generate the different word databases. Nothing in either reference or elsewhere in the art remotely suggests enhanced speech recognition can be obtained by any combination of the two references. The references could only be combined for applicant's purposes by using impermissible hindsight, in applicant's view. The mere presence of a blue pigment in one place and a yellow pigment in another, even if side by side, does not suggest the color green or suggest that the two pigments might be combined to make a green pigment. Because there is nothing to suggest that Minematsu and Shpiro could be combined to provide applicant's claimed method and enhanced speech recognition, it is respectfully requested that this ground of rejection be withdrawn.

Shpiro Does Not Correct The Deficiencies of Minematsu

As explained above, it is of record that Minematsu lacks a database of proper pronunciation created by a person who normally speaks the audible sounds properly and lacks suggestion to use a second speaker to create such a database. Shpiro is cited by the Office as teaching the use of a person who normally speaks audible sounds properly to create a database of proper pronunciation. The Office further argues that "...it would have been obvious to create a database of correct pronunciation using a person's speech who speaks the language properly..." (*page 7 of the Office action, the complete paragraph*). However, applicant does not claim a database of correct pronunciation *per se*. What applicant claims, to paraphrase relevant limitations in claims 30 and 39, is the use of a database of correct pronunciation from a properly speaking person, in combination with a database of mispronunciations from a person who usually mispronounces to enhance speech recognition which is something quite

different from what the Office considered to be obvious. Thus, Shpiro does not correct the deficiencies of Minematsu for this reason alone.

The Office draws particular attention to Shpiro's "expected audio response reference database". Database B, described at lines 12-30 of column 4, bears this title but contains "templates" comprising a statistical combination of the parameters of both correct and incorrect pronunciations of a diversity of native speakers, which does not appear to be relevant to applicant's claims. Applicant has noted however that database E "Expected Audio Specimens Database" appears to be more pertinent to the Office's argument. Database E is "a collection of recordings of a single trained speaker pronouncing each of a plurality of phrases correctly". The Expected Audio Specimens Database E is merely used as a reference source of audio specimens which the user attempts to match (*column 4, lines 50-53 and Fig. 2*). Neither Shpiro's Expected Audio Specimens Database E nor any other disclosure of Shpiro's that is apparent to applicant constitutes a database of

"...digital representations of known audible sounds corresponding to proper pronunciations of phonemes and associated alphanumeric representations of the known audible sounds..."

as is required by applicant's independent claims 30 and 39. Nothing discloses associating alphanumeric representations with digital representations of the sounds in Expected Audio Specimens Database E.

Nothing in Shpiro relates to improvement of the system's ability to recognize speech. Shpiro is focused exclusively on the user and the user's errors, providing the user with speech error indications and optional instruction on overcoming the errors. One of ordinary skill in the art would not look to Shpiro for assistance in improving the accuracy of computerized speech recognition. Nor would such assistance be found in Shpiro if they were to consider the Shpiro teaching. Thus, Shpiro does not remotely correct the deficiencies of Minematsu and no combination of Minematsu and Shpiro

remotely suggests the subject matter of applicant's independent claims 30 and 39 when that subject matter is considered as a whole, as explained herein.

Accordingly, independent claims 30 and 39 are believed clearly and patentably distinguished from Minematsu, Shpro or any other art known to applicant and therefore to be allowable.

Dependent Claims 31-34 and 36

Claims 31-34 and 36 depend either directly or indirectly from base claim 30 and are therefore believed allowable for the reasons that parent claim 30 is believed allowable. Claims 31-34 and 36 are believed furthermore allowable for the additional subject matter they recite.

Claim 32 is Also Patentable over Lessac

The additional subject matter of Claim 32 is believed furthermore to patentably distinguish the claimed invention from the art of record including the Lessac reference cited in applicant's specification. Nothing in the art suggests that Lessac system human voice training techniques can be beneficially employed in a computerized speech recognition method. Nor does the art suggest that Lessac system techniques might be employed in a computerized interactive training method to enable users to correct mispronunciations.

In view of the above amendments and the discussion relating thereto, it is respectfully submitted that the instant application, is in condition for allowance. Such action is most earnestly solicited. If for any reason the Examiner feels that consultation with Applicant's attorney would be helpful in the advancement of the prosecution, he is invited to call the telephone number below for an interview.

Respectfully submitted,

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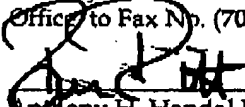
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